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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/980,010	11/30/2001	Chiharu Nishizawa	Q67460	4232

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EXAMINER

RIBAR, TRAVIS B

ART UNIT

PAPER NUMBER

1711

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7

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No.

09/980,010

Applicant(s)

NISHIZAWA ET AL.

Examiner

Travis B Ribar

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 18 November 2002.
- 2a) ☒ This action is **FINAL**. 2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1,3,4,6-9,11 and 12 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1,3,4,6-9,11 and 12 is/are rejected.
- 7) ☒ Claim(s) 6 is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☒ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
- Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
- 11) ☐ The proposed drawing correction filed on _____ is: a) ☐ approved b) ☐ disapproved by the Examiner.
- If approved, corrected drawings are required in reply to this Office action.
- 12) ☐ The oath or declaration is objected to by the Examiner.

Priority under 35 U.S.C. §§ 119 and 120

- 13) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☒ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
 2. ☐ Certified copies of the priority documents have been received in Application No. _____.
 3. ☒ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- * See the attached detailed Office action for a list of the certified copies not received.
- 14) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. § 119(e) (to a provisional application).
- a) ☐ The translation of the foreign language provisional application has been received.
- 15) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. §§ 120 and/or 121.

Attachment(s)

- | | |
|--|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413) Paper No(s). _____ |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | 5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152) |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO-1449) Paper No(s) _____ | 6) <input type="checkbox"/> Other: _____ |

DETAILED ACTION

Claim Rejections - 35 USC § 112

1. The following is a quotation of the second paragraph of 35 U.S.C. 112:

The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

2. Claim 12 is rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

3. Claim 12 recites the limitation "said synthetic resin sheet" in line 11. There is insufficient antecedent basis for this limitation in the claim because there are two synthetic resin sheets.

Specification

4. The amendment filed November 18, 2002 does not overcome the examiner's objection to the specification, as the specification is still replete with typographical and grammatical errors to the point where it impedes a reader from gaining a full, clear, concise, and exact understanding of the applicant's invention. The examiner acknowledges the changes the applicant made to certain paragraphs of the specification but notes that the paragraphs cited in the previous office action were only examples of portions of the specifications the examiner objected to. Because they were only examples, the applicant's alteration of these paragraphs alone is not sufficient to

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overcome the objection. In order to overcome the objection the applicant must correct the whole specification.

5. Claim 6 is objected to because of the following informalities:

It is dependent on a cancelled claim. It will be assumed to depend from claim 1 for the purposes of examination.

Appropriate correction is required.

Claim Rejections - 35 USC § 102

6. The text of those sections of Title 35, U.S. Code not included in this action can be found in a prior Office action.

7. Claims 1, 9, and 11-12 are rejected under 35 U.S.C. 102(b) as being anticipated by Ormsby et al. as evidenced by Bright.

Ormsby et al. discloses a multilayer laminate structure that includes two clear substrates with a polyurethane (PU) layer between them (column 3, lines 6-16). The PU layer contains the photochromic dye in claim 9 (column 4, lines 4-13) and is present between two clear transparent resin sheets, with the laminate structure formed by the method that the applicant claims in claim 12 (see the examples and column 3, line 62 to column 4, line 2). Ormsby et al. therefore meets these aspects of claims 9, 11, and 12.

The PU composition in Ormsby et al. includes diisocyanates, diols, and triols (see example 1). In this embodiment, the triols function as the curing agents the

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applicant claims and the resulting crosslinked polymer will have the same structure as the polymer formed using the method the applicant claims (see the following product-by-process explanation). In addition, Ormsby et al. also discloses that the PU is deposited between two CR 39 plates (column 3, line 52). Though it does not explicitly state that CR 39 is polycarbonate, it is well known in the art that CR 39 is polycarbonate, as seen in Bright (column 2, lines 24-25). Ormsby et al. therefore meets this part of claim 1 as well.

Claim 1 is a product-by-process claim. In product-by-process claims, "once a product appearing to be substantially identical is found and a 35 U.S.C. 102 or 103 rejection made, the burden shifts to the applicant to show an unobvious difference." MPEP 2113. In the present case, the method by which the PU layer is polymerized (one-step polymerization or two-step polymerization) does not impact the claimed transparent synthetic resin laminate, as the final product will be the same in either case—a laminate structure that contains the claimed PU layer between two transparent resin sheets. The applicant has not shown that the method by which the product is made causes the product to be patentably distinct from the product produced by the reference(s). This rejection under 35 U.S.C. 102 is therefore proper because the "patentability of a product does not depend on its method of production." *In re Thorpe*, 227 USPQ 964, 966 (Fed. Cir. 1985).

Claim Rejections - 35 USC § 103

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8. The text of those sections of Title 35, U.S. Code not included in this action can be found in a prior Office action.

9. Claims 1, 3-4, 9, and 11-12 are rejected under 35 U.S.C. 103(a) as being unpatentable over Okoroafor et al. in view of Ormsby et al. as evidenced by Bright.

Okoroafor et al. discloses a PU resin made from a PU prepolymer and a polyol that includes a photochromic dye that fits the requirements of claim 9 (column 10, lines 21-65). The resulting polymer is used to make lenses (column 10, line 5). The PU prepolymer is made from a polyisocyanate (column 3, lines 60 to column 5, line 36) and a polyol (column 5, line 55), which meets the applicant's definition of 'curing agent'. The molecular weights of the polyisocyanate (column 6, lines 3-12) and the polyol compound (column 8, line 16 and lines 50-54) fit the requirements of claim 3, and the PU prepolymer is made from the compounds listed in claim 4 (column 5, lines 34-35 and column 8, line 14).

Okoroafor et al. does not, however, show the processing steps of claim 12 or the laminate requirements of claims 1 and 11. All of these parts of the claims are in Ormsby et al. as evidenced by Bright.

Ormsby et al. as evidenced by Bright is discussed above and shows a laminate structure meeting the requirements of claims 1 and 11 formed from PU containing a photochromic compound, using the method in claim 12.

At the time of the invention, it would have been obvious to a person of ordinary skill in the art to use the PU composition in Okoroafor et al. to form the laminate

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structure disclosed in Ormsby et al. The motivation for doing so would be the reasonable expectation of similar results. Therefore it would have been obvious to combine Ormsby et al. with Okoroafor et al. to obtain the invention as specified in claims 1, 3-4, 9, and 11-12.

With regards to claim 1, this is a product-by-process claim. In product-by-process claims, "once a product appearing to be substantially identical is found and a 35 U.S.C. 102 or 103 rejection made, the burden shifts to the applicant to show an unobvious difference." MPEP 2113. In the present case, the method by which the PU layer is polymerized or the chemical structure of the PU prepolymer (claim 1) do not impact the claimed transparent synthetic resin laminate, as the final product will be the same in either case—a laminate structure that contains the claimed PU layer between two transparent resin sheets. The applicant has not shown that the method by which the product is made causes the product to be patentably distinct from the product produced by the reference(s). This rejection under 35 U.S.C. 103 is therefore proper because the "patentability of a product does not depend on its method of production." *In re Thorpe*, 227 USPQ 964, 966 (Fed. Cir. 1985).

10. Claims 7 and 8 are rejected under 35 U.S.C. 103(a) as being unpatentable over Okoroafor et al. in view of Ormsby et al. as evidenced by Bright as applied to claim 1 above, and further in view of Perrott et al.

The combined teachings of Okoroafor et al. and Ormsby et al. are discussed above. Okoroafor et al. discloses that antioxidants and light stabilizers are used in its

invention (column 9, lines 41-55). It does not, however, state the exact light stabilizers and antioxidants that the applicant claims in claims 7 and 8.

Hindered amine light stabilizers (HALS) are well known in the art as light stabilizers for polymer compositions. It is also well known in the art to use hindered phenols that have three or more hindered phenol groups as antioxidants. Perrott et al. discloses both of these practices (column 6, lines 1-15).

At the time of the invention, it would have been obvious to a person of ordinary skill in the art to use HALS and an antioxidant in the composition taught by Okoroafor et al. The motivation for doing so would be to add antioxidant properties and light stabilization properties to the composition. Therefore it would have been obvious to combine Perrott et al. with the combined teachings of Okoroafor et al. and Ormsby et al. to obtain the invention as specified in claims 7 and 8.

11. Claim 6 is rejected under 35 U.S.C. 103(a) as being unpatentable over Okoroafor et al. in view of Ormsby et al. as evidenced by Bright as applied to claim 1 above, and further in view of Toba et al.

The combination of Okoroafor et al. and Ormsby et al. is disclosed above, but does not expressly state that the tolylene diisocyanate (TDI) in claim 6 is useful in the PU composition as a curing agent. Okoroafor does disclose a hydroxyl-group terminated prepolymer curing agent made from polypropylene glycol (column 8, line 14) and states that any well-known diisocyanate can be used, but doesn't expressly state that TDI is the isocyanate in the composition. TDI is well known in the art to be a

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polyisocyanate useful in PU composition, and Toba et al. discloses a polyol made from TDI (column 11, line 64) used as part of a two-component PU adhesive (column 14, lines 56-63).

At the time of the invention, it would have been obvious to a person of ordinary skill in the art to use TDI in the composition taught by Okoroafor et al. The motivation for doing so would be that TDI is a polyisocyanate known to form PU adhesive compositions, which is basically the function of the PU in the present invention. Therefore it would have been obvious to combine Toba et al. with the combined teachings of Okoroafor et al. and Ormsby et al. to obtain the invention as specified in claim 6.

Response to Arguments

12. The amendment filed on November 18, 2002 overcomes all rejections put forth in the previous office action under 35 USC 112.

13. The applicant's arguments regarding the thermoplastic nature of the polyurethane in Hitoshi et al., Japanese Patent Kokai No. 61-0148048, and Rosthauser et al. are sufficient to overcome the rejections in the previous office action using these references.

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14. Regarding the applicant's arguments about the applicability of Ormsby et al. to the present application, the applicant argues that Ormsby et al. does not yield the same properties as the applicant's invention and that Ormsby et al. does not disclose the use of a curing agent. The examiner respectfully disagrees.

The presence of a curing agent in Ormsby et al. is further discussed in the rejection in this office action, where a triol serves as a curing agent.

15. Regarding the properties that the applicant claims the current invention to have that the reference does not, the examiner notes that such properties are not within the claims and are therefore not sufficient by themselves to overcome the rejections. Further, the declaration the applicant cites is insufficient to argue unexpected results, as the scopes of the referenced patents have not been fully tested.

16. The applicant also argues the applicability of Okoroafor et al. to the present application, stating that the presence of end-capped groups on the isocyanates leads to a product that is patentably distinct from the applicant's. The examiner respectfully disagrees, citing the teaching in Okoroafor et al. that the end-capped groups either are degassed from the composition or they form products which are not detrimental to the final product (column 3, lines 1-20). Further, the examiner notes that it is well-known in the art to end-cap isocyanates before using them in a reaction. The final products are made by removing the end group and then reacting the exposed isocyanates. The end

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product is therefore chemically equivalent to the product formed by using non-end-capped isocyanates.

The applicant's arguments with respect to the curing agent are addressed in the text of the rejection.

17. The applicant argues that Perrott et al. and Toba et al. are not applicable to the present application because they do not disclose the same type of PU or the curing agent in the present invention. However, Perrott et al. was used as a secondary reference to show the common practice of using HALS and antioxidants in PU compositions. Toba et al. was also used as a secondary reference to show the common practice of using TDI in PU compositions. The exact composition of the PU is found in the primary references of these rejections. Therefore the examiner maintains the uses of Perrott et al. and Toba et al. in the rejections.

Conclusion

18. Applicant's amendment necessitated the new ground(s) of rejection presented in this Office action. Accordingly, **THIS ACTION IS MADE FINAL**. See MPEP § 706.07(a). Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not

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mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the date of this final action.


Any inquiry concerning this communication or earlier communications from the examiner should be directed to Travis B Ribar whose telephone number is (703) 305-3140. The examiner can normally be reached on 8:30-5:00 Monday through Friday.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, James Seidleck can be reached on (703) 308-2462. The fax phone numbers for the organization where this application or proceeding is assigned are (703) 872-9310 for regular communications and (703) 872-9311 for After Final communications.

Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the receptionist whose telephone number is (703) 308-0661.

Travis B Ribar
Examiner
Art Unit 1711

TBR
December 24, 2002


James J. Seidleck
Supervisory Patent Examiner
Technology Center 1700